S1 Table: Potential primary epitopes targeted by αEp9 Abs

Construct #	Pathogen	Target protein	Accession No.	Residues	Epitope sequences	Similarity %
Phage-displayed constructs						**template: Ep9 or EpNeu**
1	SARS-COV-2 (Ep9)	Nucleocapsid	QQX29443.1	152-172	ANNAAIVLQLPQGTTLPKGFY	-
2	SARS-COV-1	Nucleocapsid	YP_009825061.1	153-173	NNNAATVLQLPQGTTLPKGFY	90.5
3	MERS	Nucleocapsid	YP_009047211.1	141-151	NNDSAIVTQFAPGTKLPKNFH	66.7
4	Human coronavirus HKU1	Nucleocapsid	YP_173242.1	166-186	TTQEAIPTRFPPGTILPQGYY	57.1
5	Human coronavirus NL63	Nucleocapsid	YP_003771.1	119-136	NQKPLEPKFSIALPPELS	13.8
6	Human coronavirus OC43	Nucleocapsid	YP_009555245.1	167-187	SSDEAIPTRFPPGTVLPQGYY	71.4
7	Human coronavirus 229E	Nucleocapsid	AGW80953.1	122-138	SEPEIPHFNQKLPNGVT	21.4
8	Human adenovirus 61	Hexon	AQQ81927.1	123-164	ANNAATPQVVFYTEDVNLEMPDTHLVFKPAVPNGTIASESLL	17.6
9	Human mastadenovirus E	PVIII	YP_068038.1	76-114	AALVYQEIPQPTTVLLPRDAQAEVQLTNSGVQLAGGATL	31
10	Influenza A virus (A/Utah/40/2017)	PB2 polymerase	AVH77902.1	225-244	GSVYIEVLHLTQGTCWEQMY	41.7
11	Influenza A virus (EpNeu) (A/Para/128982-IEC/2014(H3N2)	Neuraminidase, partial	AIX95025.1	34-46	ALGQGTTLSKGHS	38.1
12	Influenza B virus (B/California/88/2019)	Neuraminidase	QIA55965.1	67-79	ATKGVVLLLPEPE	28.6
13	Influenza C virus (C/Singapore/DSO-070193/2006)	Polymerase PB1, partial	AFV68302.1	119-145	AATALQLTVDAIKETEGPFKGTTMLEY	34.4
14	Human respiratory syncytial virus A	Fusion protein	ASU44644.1	87-100	NNAVTELQLLMQST	38.1
15	Human respiratory syncytial virus A	Attachment glycoprotein	ART28426.1	106-116	GTTPQSTTIPA	28.6
16	Human metapneumovirus	Nucleoprotein, partial	ABO15448.1	11-33	TTTAVTPSSLPQEITLLCGEILY	34.8
17	Human metapneumovirus	Attachment glycoprotein, partial	AEW90340.1	57-72	PQQTTDKHTALPKSIY	30.8
18	Human betaherpesvirus 6A	Immediate Early protein 2	AGJ52064.1	1396-1422	AATPIDFVGAVKTCNKYAKDNPKEIVL	10
19	Verrucomicrobia bacterium	NADH-quinone oxidoreductase (NOX)	PYJ45937.1	76-89	AGVVLQLPQGTTL	57.1

20	Clostridium butyricum	Bifunctional methylenetetrahydrofolate dehydrogenase/methenylte trahydrofolate cyclohydrolase (MTHFD2)	MBE6063617.1	94-104	IILQLPLPKKF	**47.6**
21	Fusobacterium mortiferum	Type II secretion protein	WP_118233983.1	77-99	VENGAIVLQYDKEIYLGLTENFF	**48**
22	Fusobacterium mortiferum	Autotransporter outer membrane protein	WP_005886362.1	449-460	NGAIVGDLVQGT	**38.1**
23	Influenza A virus (A/swine/Missouri/A01774733/2016(H1N2) or A/Para/129501-IEC/2014(H3N2))	Neuraminidase	ANK78229.1 / AIX95013	133-145/ 24-36	ALGQGTTLSNGHS	**92.3**
24	Influenza A (A/swine/Minnesota/A01394278/2013(H3N2))	Neuraminidase	AHA57095.1	134-146	ALGQGTTLNNGHS	**92.3**
25	Influenza A virus (A/California/04/2009 (H1N1))	Neuraminidase	AJI76397.1	75-89	TFFLTQGALLNDKHS	**46.7**
26	Influenza A virus (A/California/111/2015(H3N2))	Neuraminidase	ANM97445.1	133-145	ALGQGTTLNNVHS	**84.6**
27	Influenza A virus (A/mallard/California/1156/2010(H4N6))	Neuraminidase	AEK50939.1	133-142	ALSQGTTLKG	**84.6**
28	Influenza A virus (A/California/33/2011(H3N2))	Neuramidase	AGL06761.1	133-145	ALGQGTTLSNVHS	**84.6**
29	Influenza A virus (**EpNeu Pred**) (A/Para/128982-IEC/2014(H3N2))	Neuraminidase, partial	AIX95025.1	34-56	ALGQGTTLSKGHSNNTVRDRTPY	**-**
eGFP-fusion constructs						
30	Influenza A virus (**EpNeu**) (A/Para/128982-IEC/2014(H3N2))	Neuraminidase	AIX95025.1	34-46	ALGQGTTLSKGHS	**-**
31	Influenza A virus (**EpNeu Pred**) (A/Para/128982-IEC/2014(H3N2))	Neuraminidase	AIX95025.1	34-56	ALGQGTTLSKGHSNNTVRDRTPY	**-**